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51

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/606,557	06/26/2003	Xizeng Shi	2818P	5268

7590 10/20/2004
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EXAMINER

SMITH, BRADLEY

ART UNIT	PAPER NUMBER
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2824

DATE MAILED: 10/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/606,557

Applicant(s)

SHI, XIZENG

Examiner

Bradley K Smith

Art Unit

2824

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 September 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-35 is/are pending in the application.
- 4a) Of the above claim(s) 19-35 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 8-10 and 18 is/are rejected.
- 7) ☒ Claim(s) 4-7 and 11-17 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 June 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 6/26/03.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☒ Other: search notes.

DETAILED ACTION

Election/Restrictions

1. Applicant's election of group I in the reply filed on 9/27/04 is acknowledged.

Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claim Objections

2. Claims 5 and 6 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim.

Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Specifically claims 5 and 6 claim method steps (i.e. one layer is deposited before another), and such steps are not given patentable weight in device claims.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States

Art Unit: 2824

only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-3, 8-10, and 18 are rejected under 35 U.S.C. 102(e) as being anticipated by Sharma et al. (US Patent 6,538,920). Sharma et al. disclose a magnetic memory element having a top portion and a bottom portion; a first write line (116) below the magnetic memory element (100a), the first write line being electrically connected with the bottom portion of the magnetic memory element; a second write line above the magnetic memory element, the second write line (118) being electrically isolated from the magnetic memory element and oriented at an angle to the first write line (see figure 4a). With respect to claim 2, Sharma et al. disclose the write lines are perpendicular to one another (see figure 4a). With respect to claims 3, Sharma et al. disclose a magnetic tunnel junction device (see figure 6). With respect to claim 8, Sharma et al. disclose the second write line further includes a central portion (19) and an edge region (17), the edge region including not facing the magnetic memory element, the edge region including a ferromagnetic cladding layer (21), thereby concentrating a magnetic field proximate to the magnetic memory element (see figure 7). With respect to claim 9, Sharma et al. disclose the ferromagnetic cladding layer (17) is electrically isolated from the central portion of the write line (11) (see figure 7). With respect to claim 10, Sharma et al. disclose the first write line includes a soft magnetic material (17). With respect to claim 11, Sharma et al. disclose the first write line is magnetostatically coupled to the first memory element (see figure 7).

Allowable Subject Matter

Art Unit: 2824

5. Claims 4-7, 11-17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. The following is a statement of reasons for the indication of allowable subject matter: the prior art of record neither teaches nor suggests the magnetic tunneling junction having a pinned layer (claims 4-7 and 17), the first write line is multilayer structure including at least one nonmagnetic layer (claims 12 and 13), the memory having a conductive stud and is formed within a region delineated by the geometry of the stud (claim 14) the memory having a conductive stud and is formed outside a region delineated by the geometry of the stud (claim 15) the memory having a conductive stud and is formed partially within a region delineated by the geometry of the stud (claim 16).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bradley K Smith whose telephone number is (571) 272-1884. The examiner can normally be reached on 10-6 Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Elms can be reached on (571) 272-1869. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2824

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'Brad Smith', is positioned above the printed name.

Brad Smith
Patent Examiner